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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,027	11/21/2001	Nobuo Yamasaki	216349US2	9844
22850	7590	03/29/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			LIU, MING HUN	
			ART UNIT	PAPER NUMBER
			2675	7

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/989,027

Applicant(s)

YAMASAKI, NOBUO

Examiner

Ming-Hun Liu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7-12 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 58-143389 to Hoshi and US Patent 5,977,940 to Akiyama et al.

In reference to claims 1-3, it can be seen from figure 4 that Hoshi discloses a display device comprising a memory device-built-in pixel portion including a plurality of data lines and a plurality of scan lines arranged in a matrix, a plurality of pixels disposed on respective intersections of the both lines (paragraph 1, lines 1-6), a plurality of pixel switching elements electrically conducting the data lines and the pixels based on scan signals supplied to the scan lines to write graphic data supplied to the data lines into the pixels (page 1, lines 6-9), and a plurality of memory devices storing the graphic data supplied to the data lines and being constituted to be capable of supplying the graphic data stored to the pixels corresponding thereto (figure 4, items 14 and 15). Hoshi also discloses a data driver and a scan driver for controlling the write of the graphic data supplied to the data lines into the pixels in order to perform a first display (page 6, lines 7-9), a memory device driver for controlling the write of the graphic data held in the memory devices into the pixels in order to perform a second display, a power source

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voltage generating unit for supplying a power source voltage to the data driver and the scan driver (page 7, lines 21-26).

Hoshi does not however, explicitly describe a power source voltage control circuit for stopping a supply of the power source voltage from the power source voltage generating unit during a period of the second display.

Akiyama on the other hand teaches a display with pixel memory that entered a high power conservation mode when a still image is displayed (see abstract). Specifically, on column 12, lines 24-36, Akiyama teaches that when a still picture is displayed, “peripheral driving circuits such as the scanning line driver and the signal line driver are stopped, the powers of the driver circuits can be turned off.”

One skilled in the art would have been motivated to add such a power control circuit so that during the display of a still image power consumption can be reduced (column 12, lines 33-36).

In reference to claims 4 and 5, Akiyama does not explicitly disclose that the power source voltage control circuit is constituted of a TFT switch and electrically disconnects the power source voltage generating unit and the data driver based on a mode switching signal supplied from an external control circuit during the period of the second display.

However, Akiyama does teach in a general basis that TFT devices be used to function as switches (column 3, line 36). As one skilled in the art understands “turning off” (column 12, line 32) in electrical terminology often times requires switching elements. Switches and switching signals are all necessary elements in shutting power off into a circuit. It would have been

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obvious to one skilled in the art to incorporate such components in order to insure the power functionality of switching off power to peripheral circuits.

Claim 7, is anticipated as Hoshi clearly describes The display device according to claim 1, wherein each of the pixels is a liquid crystal pixel having a liquid crystal layer held between a pixel electrode and an opposite electrode (paragraph 1, lines 4-6).

Referring to claim 8, Hoshi discloses a display device where each of the memory devices is an SRAM (page 4, line 7).

In reference to claim 9, it can be seen from figure 4 that the SRAM includes two inverters and one SRAM switching element.

Claims 10-12 are rejected on the same grounds as the rejection of claims 1-3.

Claim 17 is rejected on the same grounds as the rejection of claim 7.

Claim 18 is rejected on the same grounds as the rejection of claim 8.

Claim 19 is rejected on the same grounds as the rejection of claim 9.

3. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshi in view of Akiyama and further in view of US Patent 6,166,714 to Kishimoto.

In reference to claim 6 and 16, Hoshi does not use a DC/DC converter in his invention. Kishimoto teaches the use of a DC/DC converter in powering his LCD panel. A DC/DC converter can be easily added to the display circuit, as it is a stand-alone component. Ones skilled in the art would have included a DC/DC converter to obtain proper circuit voltages from external voltage sources (column 2, 13-16).

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4. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshi in view of Akiyama and in view of Kishimoto and further in view of US Patent 5,831,418 to Kitagawa.

In reference to claim 13, I was established that above that the combination of Hoshi, Akiyama and Akiyama yields an invention that is similar to the one being claimed. The inventors however do not discuss the details of the DC/DC. Kishimoto fails to discuss the details of the DC/DC converter (column 2, line 16-17).

Kitagawa goes into detail about the specifics of a power source voltage generating unit that is similar to the one being claimed.

Kitagawa shows in figure 3, a circuit that includes a boosting unit (item 10), a smoothing unit (4 and 5) and a comparator (13) for controlling the switching of the circuit (6). Even if Kitagawa's invention is not identical to the one being claimed, one skilled in the art understands that the limiting elements disclosed in the claim are commonly found, if not standard elements to the DC/DC converter.

The remaining portions of the claim are just extensions of the argument of turning off power to peripheral circuitry to conserve power. It would have been obvious to one skilled in the art to understand that the boosting and comparator circuits drain power and need to be turned off to conserve power during the second display period.

In reference to claims 14 and 15, it is shown in figure 5, that the results from the comparators (12 and 17) and input from external oscillator supply signal that switches off the boosting unit. The AND circuit is used to combine the different signals.

The remaining portions of the claim are just extensions of the argument of turning off power to peripheral circuitry to conserve power. It would have been obvious to one skilled in the art to understand that the boosting and comparator circuits drain power and need to be turned off to conserve power during the second display period.

Response to Arguments

5. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ming-Hun Liu whose telephone number is 703-305-8488. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 703-305-3885. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Ming-Hun Liu



DENNIS-DOON CHOW
PRIMARY EXAMINER